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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/825,571	04/15/2004	Gerd Scheying	10191/3751	8673

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KENYON & KENYON LLP
ONE BROADWAY
NEW YORK, NY 10004

EXAMINER	
VATHYAM, SUREKHA	
ART UNIT	**PAPER NUMBER**
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/825,571	SCHEYING ET AL.	
	Examiner	Art Unit	
	Surekha Vathyam	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 September 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Sparks (US 6,637,257).

Sparks ('257) discloses a potentiometric sensor device for measuring pH value (see column 3, lines 55 – 60), comprising: a substrate (12); two electrodes (20, 22) positioned on the substrate, wherein the two electrodes are applied with the aid of thick-film technology (see column 4, lines 23 – 26), and wherein the two electrodes form an interdigital comb structure (see column 3, lines 40 – 43); and an evaluation circuit (42) in communication with the electrodes (column 5, lines 54 – 55). While it is understood that oil is not part of the claimed structure, Sparks ('257) discloses using the device to monitor pH of oil (see column 1, lines 23-24).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sparks (US 6,637,257) in view of Kusanagi et al. (US 5,215,643).

The device of Sparks ('257) was discussed above with regards to claim 1. Regarding claims 2 and 3, numerical values for the spacing of the comb structure are not disclosed.

Kusanagi ('643) explains that it is preferable for the electrodes of an interdigital comb to be spaced by 10 to 3000 micrometers (column 4, lines 24 – 30).

It would have been obvious to one of ordinary skill in the art to have selected a value in this range, because Kusanagi ('643) explains that these values are preferable (see column 4, lines 24 – 30).

6. Claims 4 – 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sparks (US 6,637,257) in view of Kusanagi et al. (US 5,215,643) as applied to claim 3 above, and further in view of Tani (US 5,904,987).

Regarding claims 4 and 5, Sparks ('257) further discloses that the substrate may include ceramic (column 3, lines 25 – 28) and explains the importance of low electrical conductivity (see column 4, lines 26 – 31). However, "glass-ceramic" (claim 4) and "low-temperature-sintering glass ceramic" (claim 5) are not explicitly disclosed.

Tani ('257) teaches low temperature sintering glass ceramic that cures at a temperature under 1000 degrees C (see column 1, lines 35-40).

It would have been obvious to one of ordinary skill in the art to have modified the substrate of Sparks ('257) in view of Kusanagi ('643) to be glass ceramic that cures at a temperature under 1000 degrees C as taught by Tani ('257), because Tani ('257)

explains that this permits a wider range of metals to be used for electrodes (see column 1, lines 14 – 45).

Regarding claims 6 and 7, Sparks ('257) also discloses making electrodes of metal oxides, including iridium oxide (see column 5, lines 13 – 18).

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sparks (US 6,637,257), Kusanagi et al. (US 5,215,643) and Tani (US 5,904,987) as applied to claim 7 above, and further in view of Carter (US 5,126,034).

Regarding claim 8, Sparks ('257), Kusanagi ('643) and Tani ('987) do not disclose an electrode made of silver and silver halide.

Carter ('034) discloses that an electrode of an interdigital comb may be silver/silver chloride (see column 3, lines 28 – 31).

It would have been obvious to one of ordinary skill in the art to have made one of the electrodes silver/silver chloride because Carter ('034) explains that silver/silver chloride is "especially preferred" for being a reference electrode with a known potential (see column 2, lines 40 – 47).

8. Claims 9 – 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sparks (US 6,637,257) in view of Radford et al. (US 3,843,400).

The device of Sparks ('257) was discussed above with regards to claim 1. The electrodes are not disclosed as being made from the paste compositions of claims 9 – 13.

Regarding claims 9 and 10, Radford ('400) teaches making electrodes from paste (see column 5, lines 30 – 35), wherein, in order to improve adhesion (see column 2, lines 17 – 20) between the electrodes and the substrate, the pastes include an inorganic material of 10% (see column 5, line 26).

Regarding claim 11, Radford ('400) teaches the inorganic material corresponds to the substrate (see column 4, lines 24 – 26 and column 7, line 13 – column 8, line 24).

Regarding claims 12 and 13, Radford ('400) teaches the pastes are made of a powder mixture of electrode material and inorganic material (see column 7, lines 30 – 35 and column 5, lines 25 – 28) and a carrier material (see column 7, line 35 – column 8, line 10). As taught in column 7, line 35 – column 8, line 10 there may be up to 30% solvent plus small amounts of other carrier substances, meaning that the amount of powder taught overlaps the 10% to 70% claimed.

It would have been obvious to one of ordinary skill the art to have made the electrodes of Sparks ('257) in accordance with the teachings of Radford ('400), because Radford ('400) explains in column 2, lines 16 – 20 that better reproducibility is achieved.

9. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sparks (US 6,637,257) in view of Koguchi et al. (US 6,357,089).

The device of Sparks ('257) was discussed above with regards to claim 1. Regarding claims 14 and 15, a hydrous polymer is not disclosed.

Koguchi ('089) teaches providing electrodes with a hydrous polymer layer, specifically a polyacryl amide gel (see column 4, lines 43 – 67).

It would have been obvious to one of ordinary skill in the art to have provided the electrodes of Sparks ('257) with a hydrous polymer layer, specifically a polyacryl amide gel layer, because Koguchi ('089) explains that this layer allows the electrode to interact with a living body (see column 4, lines 43 – 67).

10. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sparks (US 6,637,257) in view of Kusanagi et al. (US 5,215,643) as applied to claim 3 above, and further in view of Koguchi et al. (US 6,357,089).

Regarding claims 16 and 17, a hydrous polymer is not disclosed.

Koguchi ('089) teaches providing electrodes with a hydrous polymer layer, specifically a polyacryl amide gel (see column 4, lines 43 – 67).

It would have been obvious to one of ordinary skill in the art to have provided the electrodes of Sparks ('257) with a hydrous polymer layer, specifically a polyacryl amide gel layer, because Koguchi ('089) explains that this layer allows the electrode to interact with a living body (see column 4, lines 43 – 67).

11. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sparks (US 6,637,257), Kusanagi et al. (US 5,215,643) and Tani (US 5,904,987) as applied to claim 4 above, and further in view of Koguchi et al. (US 6,357,089).

Regarding claims 18 and 19, a hydrous polymer is not disclosed.

Koguchi ('089) teaches providing electrodes with a hydrous polymer layer, specifically a polyacryl amide gel (see column 4, lines 43 – 67).

It would have been obvious to one of ordinary skill in the art to have provided the electrodes of Sparks ('257) with a hydrous polymer layer, specifically a polyacryl amide gel layer, because Koguchi ('089) explains that this layer allows the electrode to interact with a living body (see column 4, lines 43 – 67).

12. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sparks (US 6,637,257) in view of Hornberger (US 1,956,741).

The device of Sparks ('257) was discussed above with regards to claim 1. Regarding claim 20, Sparks ('257) does not explicitly state that the evaluation circuit is configured to normalize a pH measurement in response to different operating states of motor oil.

The instant specification gives different temperatures as an example of different operating states (see page 8, lines 4 – 6). Hornberger ('741) teaches compensator (R^2) "to automatically compensate the electrode circuit for variations in the pH value due to temperature changes" (page 4, lines 56 – 60).

It would have been obvious to one of ordinary skill in the art to have configure the evaluation circuit of Sparks ('257) to normalize a measurement in response to different temperatures as taught by Hornberger ('741) to achieve accurate results (see page 4, lines 56 – 60).

Response to Arguments

Applicant doesn't even attempt to point out a structural difference between what is being claimed and the prior art structure. Instead applicant discusses the intention to use the claimed structure to measure the pH of motor oil. "[A]pparatus claims cover what a device *is*, not what a device *does*." *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990) (emphasis in original). A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham,* 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987). "[T]he manner or method in which such machine is to be utilized is not germane to the issue of patentability of the machine itself." *In re Casey*, 370 F.2d 576, 152 USPQ 235 (CCPA 1967). "Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining the patentability of the apparatus claim". *Ex parte Thibault* 164 USPQ 666, 667 (Bd. App. 1969). "Inclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims" *In re Otto,* 136

USPQ 458, 459 (CCPA 1963). Nonetheless, Sparks ('257) discloses using his device for analysis of oil in column 1, lines 23 – 24.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Morishita et al. (US 5,146,169) discloses monitoring circuits for motor oil using pH.

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Surekha Vathyam whose telephone number is 571-272-2682. The examiner can normally be reached on 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X. Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SV/
15 October 2007

NAM NGUYEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700